

Amendments to the Claims

The following Listing of Claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A machine-implemented bar coding method, comprising:
generating a corroborative signed message from information to be encoded; and
~~modulating~~ converting a base image into a marked image containing with a graphical encoding of the signed message ~~to produce a marked image by~~
dividing the base image into multiple image areas,
segmenting at least some of the image areas into multiple groups based on pixel values in the image areas, and
encoding the segmented image areas with sets of two-dimensional code patterns to graphically encode the corroborative signed message in the marked image, wherein each set of code patterns encodes a respective corresponding group of image areas.

Claim 2 (original): The method of claim 1, wherein generating the signed message comprises producing a cryptographic hash from the information to be encoded.

Claim 3 (original): The method of claim 2, wherein generating the signed message comprises encrypting the cryptographic hash to produce a digital signature.

Claim 4 (original): The method of claim 3, wherein the cryptographic hash is encrypted with a private key.

Claim 5 (original): The method of claim 3, wherein generating the signed message comprises concatenating the information to be encoded and the digital signature.

Claim 6 (original): The method of claim 1, wherein the signed message includes a public key certificate.

Claim 7 (currently amended): A machine-implemented bar coding method, comprising:

generating a corroborative signed message from information to be encoded; and
~~modulating~~ converting a base image that includes an image of a handwritten signature into a marked image having a visual appearance that resembles the base image and contains
~~with a graphical encoding of the signed message to produce a marked image, wherein the base image includes an image of a handwritten signature.~~

Claim 8 (currently amended): The method of claim 7, wherein ~~modulating the base image~~ the converting comprises ~~vectorizing~~ converting the handwritten signature image into a vector form image.

Claim 9 (currently amended): The method of claim 8, further comprising obtaining a set of base control points for the ~~vectorized handwritten signature~~ vector form image, and encoding the information by displacing the base control points to obtain a marked set of control points from which the marked image is produced.

Claim 10 (original): The method of claim 1, further comprising extracting the signed message from the marked image.

Claim 11 (original): The method of claim 10, wherein the signed message is extracted from the marked image based upon a comparison of the marked image and the base image.

Claim 12 (original): The method of claim 10, further comprising decoding the extracted signed message to produce a decoded message.

Claim 13 (original): The method of claim 12, further comprising extracting from the decoded message an encrypted original cryptographic hash and the encoded information.

Claim 14 (original): The method of claim 13, further comprising decrypting the encrypted original cryptographic hash with a public key.

Claim 15 (original): The method of claim 14, further comprising authenticating the extracted information by producing a new cryptographic hash from the extracted information, and comparing the new cryptographic hash with the original cryptographic hash.

Claim 16 (currently amended): A bar coding system, comprising an encoder configured to:

generate a corroborative signed message from information to be encoded; and
~~modulate~~ convert a base image into a marked image containing with a graphical encoding of the signed message ~~to produce a marked image~~ by
dividing the base image into multiple image areas,
segmenting at least some of the image areas into multiple groups based on pixel values in the image areas, and
encoding the segmented image areas with sets of two-dimensional code patterns to graphically encode the corroborative signed message in the marked image, wherein each set of code patterns encodes a respective corresponding group of image areas.

Claims 17-19 (canceled)

Claim 20 (currently amended): A computer program residing on a computer-readable medium and comprising computer-readable instructions for causing a computer to:

generate a corroborative signed message from information to be encoded; and
~~modulate~~ convert a base image ~~with~~ into a marked image containing a graphical encoding of the signed message ~~to produce a marked image~~ by
dividing the base image into multiple image areas,
segmenting at least some of the image areas into multiple groups based on pixel values in the image areas, and

encoding the segmented image areas with sets of two-dimensional code patterns to graphically encode the corroborative signed message in the marked image, wherein each set of code patterns encodes a respective corresponding group of image areas.

Claim 21 (currently amended): The method of claim 8, wherein the ~~vectorizing~~ converting of the handwritten signature image comprises fitting a sequence of spline curves to the handwritten signature.

Claim 22 (currently amended): The system of claim 16, wherein the base image includes an image of a handwritten signature, and the encoder is configured to ~~vectorize~~ convert the handwritten signature image into a vector form image.

Claim 23 (currently amended): The system of claim 22, wherein the encoder is configured to obtain a set of base control points for the ~~vectorized handwritten signature~~ vector form image and encode the information by displacing the base control points to obtain a marked set of control points from which the marked image is produced.

Claim 24 (currently amended): The computer program of claim 20, wherein the base image includes an image of a handwritten signature, and the computer-readable instructions cause the computer to ~~vectorize~~ convert the handwritten signature image into a vector form image.

Claim 25 (currently amended): The computer program of claim 24, wherein the computer-readable instructions cause the computer to obtain a set of base control points for the ~~vectorized handwritten signature~~ vector form image and encode the information by displacing the base control points to obtain a marked set of control points from which the marked image is produced.

Claim 26 (new): The method of claim 1, wherein the marked image has a visual appearance that resembles the base image.

Claim 27 (new): The method of claim 1, wherein the marked image corresponds to a withdrawal authorization signature for a bank draft, and further comprising rendering the marked image on the bank draft.

Claim 28 (new): The method of claim 1, wherein the marked image corresponds to an authentication certification for a financial instrument, and further comprising rendering the marked image on the financial instrument.

Claim 29 (new): The method of claim 1, wherein the marked image corresponds to a postage indicium for an envelope, and further comprising rendering the marked image on the envelope.